

## CLAIMS

1. Apparatus for providing granular material to a loading hopper preparatory to processing comprising:

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- a. an at least partially transparent receptacle for receiving said material prior to processing thereof by machinery supplied by said hopper, having a top including first valve means for selectably connecting said receptacle to vacuum or ambient air;
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- b. means for drawing vacuum in said receptacle;
- c. conduit means for connecting said receptacle to a supply of said granular material;
- d. second valve means for selectably permitting material flow from said receptacle into said hopper;
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- e. means for temporally adjustably closing said first valve means and opening said second valve means responsively to visually detected presence of a suitable amount of material in said receptacle.

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2. Apparatus of claim 1 further comprising baffle means at an inlet to said receptacle for directionally deflecting flow of material into said receptacle from said conduit thereby reducing kinetic energy of said material.

3. Apparatus for providing plastic resin material to a plurality of loading hoppers and maintaining said material in said

hoppers at or above preselected levels preparatory to delivery of said material therefrom for processing comprising:

- a. a plurality of temporary material storage receptacles for receiving said plastic resin material prior to processing thereof by machinery supplied by respective ones of said hoppers;
- b. means for drawing vacuum in said receptacles;
- c. first valve means selectably connecting said receptacles with said vacuum drawing means;
- d. conduit means for connecting said receptacles to respective supplies of plastic resin material;
- e. second valve means for selectably permitting plastic resin material flow from said receptacles into associated hoppers;
- f. manually adjustable shutoff time control means for closing said first and second valve means, thereby permitting air flow into respective receptacles responsively to visually detected criteria respecting level of said plastic resin material in a receptacle of interest.

4. Apparatus of claim 3 wherein said first and second valve means are actuated by pneumatic piston-cylinder combinations.

5. Apparatus of claim 3 wherein said second valve means is a slide gate valve.

6. Apparatus of claim 3 wherein said second valve means is a flap maintained closed by gravity

5 7. Apparatus of claim 3 further comprising baffle means within said receptacle proximate the inlet from said conduit means for directionally plurally deflecting flow of airborne plastic resin material drawn into said receptacles from said conduit means thereby dissipating kinetic energy of said moving airborne resin material.

10 8. Apparatus of claim 3 wherein said receptacle has a cast top including means for connecting said receptacle to vacuum or ambient by simultaneously respectively opening one of said vacuum line connection means and said ambient air connection means and closing a remaining one of said means.

15 9. Apparatus of claim 3 further comprising means for connecting said material supply conduit to said receptacle including a plate inclined at an angle to the flow direction of material drawn to said receptacle for downwardly deflecting horizontally flowing material entering said receptacle.

20 10. A method for providing plastic resin material to a loading receptacle and periodically replenishing said receptacle with said material, comprising:

25 a. drawing a vacuum within a receptacle thereby inducing

plastic resin material flow from a plastic resin material supply into said receptacle and marking the commencement of said drawing as a vacuum drawing starting time; and

b. stopping flow of material into said receptacle and marking said stoppage as a vacuum drawing stopping time responsively to optically detected sensed material level within said receptacle.

11. The method of claim 10 further comprising repeatedly drawing said vacuum for a filling period defined by the difference between said starting and stopping times and adjusting said filling period if needed by changing said stopping time responsively to observation of a desired material level in said receptacle.

12. The method of claim 10 wherein changing said filling period responsively to observation of a desired material level in said receptacle is performed by actuating a switch during said filling period and deactuating said switch to define a new stopping time.

13. The method of claim 10 further comprising directionally deflecting plastic material flowing into said receptacle upon entry therinto, thereby reducing kinetic energy of said flowing material.

14. A method for providing plastic resin material to a plurality of loading receptacles and periodically replenishing said receptacle with said material, comprising:

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- a. drawing vacuum within said receptacles serially thereby inducing plastic resin material flow from a plastic resin material supply into each of said receptacles in a selected sequence and marking the commencement of said drawing for each of said receptacles as a vacuum drawing starting time for a receptacle of interest; and
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- b. stopping flow of material into said receptacles and separately marking said stoppage as a vacuum drawing stopping time for each of said receptacles responsively to optically detected sensed material level within each of said receptacles.

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15. The method of claim 14 further comprising serially repeatedly drawing said vacuum for each of said receptacles for a filling period defined by the difference between said starting and stopping times and adjusting said filling period separately for each of said receptacles if needed by changing said stopping time responsively to observation of a desired material level in said receptacle.

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16. The method of claim 15 wherein changing said filling period responsively to observation of a desired material level in a selected one of said receptacles is performed by actuating a

switch during said filling period and deactuating said switch to define a new stopping time for said selected receptacle.

17. The method of claim 16 wherein a single switch is used to  
5 define a new stopping time for all of receptacles, as needed.

18. The method of claim 10 further comprising thrice directionally  
deflecting said material as said material enters said  
receptacle.

10 19. The method of claim 14 further comprising thrice directionally  
deflecting said material as said material enters said  
receptacle.

15 20. Apparatus of claim 1 wherein said receptacle is cylindrical  
and transparent.

21. Apparatus of claim 20 wherein ends of said receptacle are  
castings.

20 22. Apparatus of claim 21 wherein said first and second valve  
means are within said castings.

25 23. Apparatus of claim 7 wherein said baffle includes a generally  
parallel piped-shaped housing into which said material  
entrained in air enters.

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	